

Why Agriculture Teachers Leave: A National Examination of Turnover Intentions and Work-Family Conflict

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Abstract

Using data from a random sample of secondary school agriculture teachers in the United States, this study explored the work-family conflict and turnover intentions of agriculture teachers. Additionally, this study sought to determine the relationship between work-family conflict and turnover intentions among agriculture teachers. Work-family conflict was split into two domains, work interference with family and family interference with work. Teachers reported the higher level of work-family conflict within the work interference with family domain. However, agriculture teachers in this study identified moderately low turnover intentions. The three variables of interest (i.e., work interference with family, family interference with work, and turnover intentions) were compared by gender with no statistically significant differences identified. The final objective of this study was to determine the relationship between the two work-family conflict variables and turnover intentions. The model predicted 18% of the turnover intentions among agriculture teachers. Only one of the predictor variables, work interference with family, was identified as a statistically significant predictor of turnover intentions. The implications of work-family conflict, specifically work interference with family, are discussed and recommendations for research and practice are explored.

Keywords: work-family conflict; turnover intentions; work role; family role; work-family balance

Introduction and Need for the Study

The shortage of qualified teachers has remained one of the persistent issues facing the American education system over the past few decades (Ingersoll, 2001). Agricultural education has not been immune to this problem, with a teacher shortage plaguing the profession for more than 40 years (Kantrovich, 2010). Research indicates solving this teacher shortage is imperative to providing all students with access to a positive learning environment (Elfers, Plecki, & Knapp, 2006). Based on the pressing need for more teachers and the importance of maintaining an effective learning environment for students, this study explored data from a national sample of agriculture teachers to shed light on the teacher shortage issue within secondary agricultural education.

Solving the teacher shortage problem requires emphasis on two major areas: recruitment of more teachers into the profession and retention of those teachers within the profession. While both areas are critical, we focused specifically on the retention of existing agriculture teachers. Ingersoll and Smith (2003) identified teacher retention as a priority to stop the “revolving door” in which teachers flood out of the profession seemingly as quickly as they enter. In the most recent

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supply and demand study, teacher turnover was identified as an issue in the agricultural education profession, helping to spur the teacher shortage crisis (Foster, Lawver, & Smith, 2014). In an effort to understand teacher retention, research has focused on relationships between work variables and teacher retention without proportionately attending to variables outside of the workplace. However, evidence suggests home and family variables (e.g., raising children, family relocation) are among the most common reasons why teachers of all disciplines leave the profession (Ingersoll, 2001). These findings warrant further research and illuminate a potential conflict between the expectations of teachers at work and at home.

The potential for conflict between work variables and home variables within agricultural education is exacerbated by the strenuous demands of the agriculture teaching profession. Newcomb, Betts, and Cano (1987) stated agriculture instructors complain about having more work to do than is "humanly possible" (p. 26) and Torres, Ulmer, and Aschenbrener (2008) indicated agricultural educators must meet the traditional demands of teaching as well as roles associated with the total program. The research of Torres et al., (2008) further revealed agricultural educators regularly surpass a standard 40 hour-week doing such things as preparing lessons, completing paperwork, coaching career development teams, evaluating student work, managing labs and equipment, and supervising student projects.

Research throughout agricultural education supports the notion that agriculture teachers are struggling to meet the demands of the profession. Specifically, research has identified working long hours (Mundt & Connors, 1999; Torres, Lawver, & Lambert, 2009), preparing classes (Boone & Boone, 2007; Mundt & Connors, 1999; Myers, Dyer, & Washburn, 2005), meeting deadlines (Torres et al., 2008; Torres et al., 2009), managing time (Boone & Boone, 2007; Edwards & Briers, 1999; Myers et al., 2005), balancing personal life and professional life (Edwards & Briers; 1999; Mundt & Connors, 1999; Myers et al., 2005; Torres et al., 2009), managing and reducing stress (Edwards & Briers, 1999; Myers et al., 2005), and excessive paperwork (Boone & Boone, 2007; Mundt & Connors, 1999) as major challenges faced by agriculture teachers. As the expectations of agriculture teachers continue to increase, and teachers spend more time at work, less time is available for other life roles, including family. Research is needed to identify the relationship between work expectations, family roles, and the turnover intentions of agriculture teachers. Few studies in agricultural education have addressed this topic, but none have explored the relationships between work-family conflict and turnover intentions at a national level. This study sought to address this critical gap in the literature by utilizing a national sample of agriculture teachers to explore the relationship between time-based work-family conflict and the intentions of agriculture teachers to leave the profession. As the demographics within the profession continue to shift, along with society's work and family role expectations, the need to examine the work-family interface has never been more salient.

Theoretical Framework

The theoretical foundation for this research is the role conflict theory (Greenhaus & Beutell, 1985). The role conflict theory emerged from literature identifying the negative psychological effects of trying to balance work and non-work roles. Greenhaus and Beutell (1985) called this "work-family conflict" and defined it as "conflict in which the role pressures from the work and family domains are mutually incompatible in some respect" (p. 77). This theory assumes an individual's time and energy are limited (i.e., scarcity hypothesis), and resources expended in one role (e.g. work) depletes resources available for other life roles (e.g., family), thereby creating conflict (Gutek, Searle, & Klepa, 1991).

The role conflict theory also assumes the amount of work-family conflict an individual experiences rises proportionally with the number of hours he or she spends engaged with either work or family roles (Duxbury, Higgins, & Lee, 1994; Gutek et al., 1991). Accordingly, the more time individuals spend participating in work-related activities, the more they should experience their work interfering with family activities and obligations. On the other hand, the more time an individual spends in family related activities, the more they should experience family interfering with work. The important interactions between work and family roles create a bi-directional work-family conflict variable. More specifically, conflict can take the form of work interference with family (WIF) or family interference with work (FIW). Research has identified WIF and FIW to be positively related to both turnover intentions and actual attrition (Allen, Herst, Bruck, & Sutton, 2000; Grandey & Cropanzano, 1999; Greenhaus, Collins, Singh, & Parasuraman, 1997; Netemeyer, Boles, & McMurrian, 1996). Figure one illustrates the relationship between WIF, FIW, and turnover intentions.

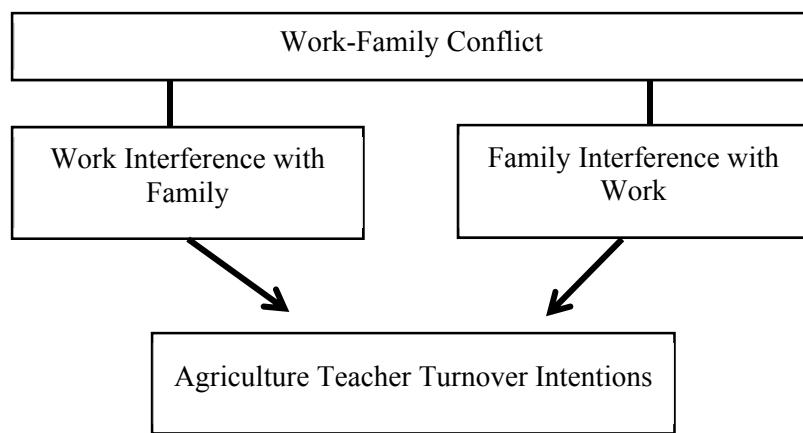


Figure 1. Conceptual model of WIF, FIW, and teacher turnover intentions.

Literature Review

The literature on work-family conflict and teacher turnover is expansive. In this review of literature, we focused on three areas of existing research most salient to our analysis. Those three areas are: the potential influence of changing demographics, research on work-family conflict, and research on teachers' turnover intentions.

Changing Demographics

The importance of work-family conflict among working Americans emerged with changes in demographic patterns across the United States. According to Barnett and Hyde (2001), "One of the most dramatic markers of the late 20th and early 21st centuries is the astonishingly fast pace of change in the work and family roles of women and men in the United States" (p. 781). As earning power among men diminished in the 1970s, many married women entered the labor force to help support their families. Since then, traditional models that depended on the man as the exclusive breadwinner, and the woman concentrating solely on the home, no longer apply to the majority of American families (Bond, Galinsky, & Swanberg, 1998).

In tandem with social changes, agricultural education experienced significant demographic shifts. When the Smith-Hughes Vocational Education Act of 1917 was passed, secondary

agricultural education consisted primarily of males. With the Civil Rights movement and the passing of Title IX in 1972, females were given equal access to education programs, including agricultural education. Consequently, female enrollment in agricultural education increased; however, this increase did not immediately translate into more women pursuing careers as agricultural educators. In fact, few females in the 1970's and 1980's entered the agriculture teaching profession. In 1987, females comprised only five percent of agriculture teachers (Knight, 1987). However, by 2001 the proportion of females had risen to 22 percent, and by 2007, females represented roughly 27 percent of agricultural educators (Camp, Broyles, & Skelton, 2002; Kantrovich, 2007).

Due to the competing demands between work and family roles, responsibilities at home often interfere with demands at work, and vice versa, resulting in work-family conflict. Both men and women experience work-family conflict; however, men and women may experience work-family conflict differently. In our study, we sought to explain the influence of gender on work-family conflict by including gender as an independent variable within our analysis of the relationship between work-family conflict and teacher turnover intentions.

Work Family Conflict

Since the industrial revolution, the interface between work and family domains has become a major consideration for employees, families, and society (Westman & Piotrkowski, 1999). In recent decades, changing workforce demographics and shifting gender roles have blurred the lines between work and family roles (Gignac, Kelloway, & Gottlieb, 1996). Many in the workplace, including teachers, bring tasks from their job home with them to be completed while occupying the family role. Additionally, advances in technology have allowed more people to do work while occupying the family domain. The spillover of work and family roles has increased the potential for work-family conflict (Crouter, 1984). Educational research has largely failed to explore this phenomenon and the potential influence on teacher satisfaction and retention (Cinamon & Rich, 2005). In this study, we sought to explore work-family conflict among secondary agriculture teachers and the impact of work-family conflict on turnover intentions.

Teacher Turnover

Understanding why teachers leave the profession is critical to stopping the "revolving door" of teacher attrition (Ingersoll & Smith, 2003). Research throughout education has explored the effects of workplace characteristics on teacher turnover. Those variables found to relate to teachers leaving the profession include low salary (Boyd, Lankford, & Wyckoff, 2005; Flynt & Morton, 2009; Krieg, 2006), classroom management (Gonzales, Brown, & Slate, 2008; Ingersoll, 2001), and high student to teacher ratio (Theobald, 1990). In addition to those factors influencing teacher turnover, research has explored workplace factors associated with teacher retention; these variables include mentoring programs (Danielson, 2002; Eller, Deorfler, Meier, 2000; Smith & Ingersoll, 2004), supportive administrators and colleagues (Darling-Hammond, 2000; Eller et al., 2000; Ingersoll, 2001; Smith & Ingersoll, 2004), and teacher autonomy (Ingersoll, 2001; Shen, 1997).

Focusing on agricultural education, research has identified a number of variables influencing teacher attrition, including administrative support (Boone & Boone, 2007; Walker, Garton, and Kitchel, 2004), excessive workload (Chaney, 2007), low salary (Boone & Boone, 2007), student discipline (Boone & Boone, 2007; Mundt & Connors, 1999; McKim & Velez, 2015; Myers et al., 2005), and teacher self-efficacy (Blackburn & Robinson, 2008; McKim & Velez, 2015; Swan, 2005; Wheeler & Knobloch, 2006). Tippens et al. (2013) used this research to build a comprehensive model of teacher attrition in agricultural education. This model includes family and personal factors (e.g. children and family responsibilities), financial compensation, employment

factors (e.g. teacher experience), and working conditions as the most salient factors influencing agriculture teacher attrition.

The persistent shortage of qualified agriculture teachers (Kantrovich, 2010) necessitates new areas of exploration into teacher retention. To date, research has explored a number of variables influencing teacher attrition; however, there is a dearth of studies exploring the relationship between work-family conflict and attrition. Furthermore, there are no known national studies within agricultural education exploring the relationship between work-family conflict and teacher attrition. This study sought to address this gap in the literature by exploring a national sample of agriculture teachers and the relationship between work-family conflict and turnover intentions.

Purpose & Objectives

The purpose of this study was to describe secondary school agriculture teachers' work-family conflict, turnover intentions, and the relationship between work-family conflict and turnover intentions. Exploring work-family conflict and its impact on teacher turnover aligns with the National Research Agenda Priority three which calls for research into a "sufficient scientific and professional workforce" (Roberts, Harder, & Brashears, 2016, p. 9). Priority area three calls for research exploring the development of a highly qualified agriculture workforce and, recognizing the importance of agricultural educators, stated, "This will require that adequate numbers of well-prepared, highly effective agricultural educators, communicators, and leaders be made available to meet current and future needs" (Doerfert, 2011, p. 20). In order to accomplish our purpose, the following research objectives were developed to guide the study.

1. Describe the sample of agriculture teachers.
2. Describe the work-family conflict of agriculture teachers; specifically work interference with family (WIF) and family interference with work (FIW).
3. Describe agriculture teachers' turnover intentions.
4. Determine the relationship between WIF, FIW, and agriculture teachers' turnover intentions.

Methods

The initial population for this study consisted of approximately 11,000 secondary agriculture teachers in the United States during the 2014-2015 school year (National FFA Organization, 2014). The appropriate sample size was determined based on Cochran's (1977) and Krejcie and Morgan's (1970) sample size determinant formulas. This study targeted a simple random sample from the entire population of secondary agriculture teachers in the United States. A sample frame of 778 agriculture teachers was obtained from the National FFA Organization and consisted only of names and email addresses. The instrument was sent to all potential respondents using the tailored design method (Dillman, 2007). A total of 75 participants' emails "bounced" leaving an accessible population of 667. Initially, a total of 264 responses were collected. Due to our interest in the potential conflict between work and family roles of agriculture teachers, it was imperative to limit respondents to those who identified as active participants in a family role. "Family" was defined, for participants, as participation in "any and all committed relationships that might influence how time is invested in the non-work domain." In total, 34 participants did not meet the population parameters for the study (not part of a family role $n = 26$; or not agriculture teacher $n = 4$). Therefore, 234 usable surveys were collected out of 667 total potential participants, yielding a response rate of 35.08% ($n = 234$). The data were downloaded into the Statistical Package for the Social Sciences (SPSS) version 20.0 for analysis.

Non-response bias was assessed using the methods outlined by Lindner, Murphy, and Briers (2001). Due to the limited contact information provided in the frame, no attempt was made to contact non-respondents by telephone. Thus, as recommended by Lindner et al., on-time respondents ($n = 199$) were compared with late-respondents ($n = 35$) to determine if any systematic differences existed. No statistically significant differences existed between on-time and late respondents within the variables of interest. Therefore, we considered non-response error to be insignificant to this study (Lindner et al., 2001; Miller & Smith, 1983).

The survey instrument consisted of questions to assess and explore relationships between work-family conflict and the turnover intentions of agriculture teachers. Time-based work-family conflict was measured using the six-item, time-based subscale of the work family conflict scale (WFCS; Carlson Kacmar, & Williams, 2000). This instrument was designed to assess *work interference with family* (WIF) and *family interference with work* (FIW). Participants rated each item on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*), with higher scores indicating greater conflict. Sample items for the WIF construct included "My work keeps me from my family activities more than I would like" and "I have to miss family activities due to the amount of time I must spend on work responsibilities." Sample items for the FIW construct included "The time I spend on family responsibilities often interferes with my work responsibilities" and "The time I spend with my family often causes me not to spend time in activities at work that could be helpful to my career." The WFCS has been used extensively in research and has been found to be reliable and valid (Bruck, Allen, & Spector, 2002; Carlson et al., 2000; Fu & Shaffer, 2001; Ogungbamila, 2014; Vieira, Lopez, & Matos, 2013). Items used in the survey instrument were identical to those used in previous studies.

Agriculture teachers' turnover intentions were measured using items from the School and Staffing Survey (SASS; NCES, 2014) and the attrition risk assessment instrument (Lemons, 2013). These instruments were synthesized into a four-item construct used to determine agriculture teachers' intent to exit the teaching profession before retirement. Example items included "I plan to leave agriculture teaching sometime before I am eligible to retire" and "If I could get another job different from being an agriculture teacher, I would take it." Participants rated items on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). Higher scores on the teacher turnover intentions scale indicated more intention to leave the profession early. We chose to use turnover intentions due to the research identifying it as a strong predictor of actual turnover, even more so than job satisfaction and organizational commitment (Kopelman, Rovenpor, & Millsap, 1992; Vandenberg & Nelson, 1999).

A panel of experts consisting of doctoral students in the College of Education and professors in the College of Agriculture examined and critiqued the instrument for content, face validity, and overall quality. Construct reliability estimates were calculated for each construct from a pilot test of career and technical education teachers in Oregon (see Table 1). According to Nunnally and Bernstein (1994), reliability estimates should meet or exceed an alpha of .70 to be considered reliable. All of the constructs in this study's instrument exceeded the alpha of .70.

Table 1

Construct Reliability Estimates of the Survey Instrument ($n = 30$)

Instrument Construct	Cronbach's α (Pilot)	Cronbach's α (Post-hoc)
Work Interference with Family (WIF)	.91	.92
Family Interference with Work (FIW)	.80	.84
Turnover Intentions	.83	.88

Before conducting data analyses, we explored the assumptions of parametric data as well as the specific assumptions of regression analyses. Regarding the assumptions of parametric data, we found the variances to be the same throughout the data, the data to be independent, and the data to be normally distributed. In addition to the assumptions of parametric data, we checked for the assumptions of linear regression, including variable types, non-zero variance, collinearity between independent variables, homoscedasticity, independent and normally distributed error, and linearity between predictor and outcome variables. We found the data met all of the assumptions of regression.

Research objective one (i.e. describe the sample of agriculture teachers) was accomplished by determining and reporting demographic data. In order to accomplish research objectives two (i.e. describe the work-family conflict of agriculture teachers; specifically work interference with family and family interference with work) and three (i.e. describe agriculture teachers' turnover intentions), means and standard deviations were calculated and reported. Data for research objectives two and three were parsed and reported by gender so that male and female agriculture teachers could be compared. Additionally, we performed independent samples *t*-tests to determine if any statistically significant differences existed between male and female respondents regarding WIF, FIW, or turnover intentions. Effect sizes were also calculated for the differences in means using Cohen's *d*. The criteria for effect size was established *a priori* at less than 0.20 "negligible;" between 0.20 and 0.49 "small;" between 0.50 and 0.80 "medium;" and more than 0.80 "large" (Cohen, 1988). In order to accomplish research objective four (i.e. determine the relationship between WIF, FIW, and agriculture teachers' turnover intentions), we ran an ordinary least squares (OLS) regression. The predictor variables included WIF, FIW, and gender with the dependent variable being teachers' turnover intentions. Betas, standardized betas, and overall *R*² were calculated and reported.

Findings

Demographic information was collected from respondents ($n = 234$) to accomplish research objective one. Of the responding teachers, 40.08% were female and 59.91% were male. This was representative of the national population of agriculture teachers (43% female, 57% male; Foster et al., 2014). Respondents ranged from 22 to 69 years old with the mean age being 40.26. The majority of responding teachers (93.42%) self-identified as "White, European American, Non-Hispanic." At the time of data collection, 93.24% of responding teachers were married and 72.22% of respondents indicated they had children. On average, responding teachers had 10.22 years of teaching experience, taught 20.19 students per class, and taught in schools with an average of two agriculture teachers.

The second and third research objectives sought to describe agriculture teachers' work interference with family (WIF), family interference with work (FIW), and turnover intentions (see Table 2). Overall, agriculture teachers in this study reported moderate levels of WIF ($M = 4.58$). When comparing WIF by gender, males reported slightly higher WIF ($M = 4.63$) than females ($M = 4.54$). However, there were no statistically significant differences between males and females for WIF (*p*-value = .545). Furthermore, effect size measurements indicated gender had a negligible effect on teachers' WIF (Cohen's *d* = 0.08). Regarding FIW, agriculture teachers in this study reported moderately low levels of FIW ($M = 2.78$). When comparing FIW by gender, females reported slightly higher FIW ($M = 2.86$) than males ($M = 2.75$). However, there were no statistically significant differences between males and females for FIW (*p*-value = .422). Furthermore, effect size measurements indicated gender had a negligible effect on teachers' FIW (Cohen's *d* = 0.10). Teachers' turnover intentions were assessed to accomplish research objective three. Overall, teachers in this study reported moderately low intentions to exit the teaching profession prior to retirement ($M = 2.95$). When comparing agriculture teachers' turnover intentions by gender,

females reported slightly higher turnover intentions ($M = 2.98$) than males ($M = 2.92$). However, there were no statistically significant differences between males and females for reported turnover intentions (p -value = .774). Furthermore, effect size measurements indicated gender had a negligible effect on teachers' turnover intentions (Cohen's $d = 0.04$).

Table 2

WIF, FIW, and Turnover Intentions by Gender

Constructs	Total		Female		Male		<i>p</i> -value	Cohen's <i>d</i>		
	(n = 227)		(n = 91) ¹		(n = 136) ¹					
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Work Interference with Family (WIF)	4.58	1.07	4.54	1.14	4.63	1.01	-0.60	.545	0.08	
Family Interference with Work (FIW)	2.78	1.04	2.86	1.06	2.75	1.04	0.81	.422	0.10	
Turnover Intentions	2.95	1.35	2.98	1.37	2.92	1.33	0.29	.774	0.04	

Note. WIF, FIW, and turnover intentions were measured on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*).

¹Seven teachers declined to respond.

The fourth research objective sought to determine the relationship between WIF, FIW, and agriculture teachers' turnover intentions. An OLS regression was conducted to determine this relationship. The dependent variable was agriculture teachers' turnover intentions while the independent variables were WIF and FIW. Additionally, gender was entered into the regression analysis as a control variable. The independent variables, in combination, comprised a significant model ($F = 15.68$; p -value < .001) and predicted 18% ($R^2 = .18$) of the variance in agriculture teachers' turnover intentions (see Table 3). Only one predictor variable, WIF, was a significant predictor of teachers' turnover intentions ($\beta = .41$; p -value = < .001). Gender and FIW were statistically insignificant predictors in this model.

Table 3

Relationship between WIF, FIW, and Turnover Intentions

Variable	Dependent Variable: Teacher Turnover Intentions					
	Zero-order correlation (<i>r</i>)	<i>p</i> -value	<i>B</i>	<i>SEB</i>	β	<i>p</i> -value
Gender	.02	.774	-.10	.17	-.04	.538
WIF	.42	<.001	.53	.08	.41	<.001
FIW	.08	.258	.04	.08	.03	.638

Note. $R = .42$, $R^2 = .18$, $F = 15.68$, p -value < .001. WIF, FIW, and turnover intentions were measured on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*).

Conclusions, Implications, and Recommendations

The purpose of this research was to provide the first nationwide analysis of secondary school agriculture teachers' work-family conflict, measured as work interference with family (WIF) and family interference with work (FIW), turnover intentions, and the relationship between work-family conflict variables and agriculture teachers' turnover intentions. This national analysis was a critical step in understanding agriculture teacher retention. The first research objective provided insight into the responding teachers' demographics. Considering the random sampling methodology utilized in this study, this information provides valuable insight into the demographics of secondary agriculture teachers who identified themselves as active participants in a family role. Although various demographic data were collected, only gender was utilized in the analysis of this study. Further research should explore how other demographic variables (e.g. number of teachers, time in the profession, and age) influence WIF, FIW, and turnover intentions.

Research objective two sought to describe agriculture teachers' work-family conflict. This construct was split into two areas, WIF and FIW, to provide additional insight into the origination and type of work-family conflict experienced by secondary agriculture teachers. Consistent with research outside agricultural education (Cinamon & Rich, 2005), our findings revealed agriculture teachers experienced higher levels of WIF than FIW. This finding suggests agriculture teachers experience more conflict originating in the work domain than the family domain. In other words, the negative psychological strain agriculture teachers experience as a result of negotiating multiple life roles is a result of workplace characteristics more than family characteristics. The expansive work responsibilities of agriculture teachers (Boone & Boone, 2007; Mundt & Connors, 1999; Myers et al., 2005; Torres et al., 2009) are likely causing the work domain to spill into teachers' family lives, causing strain or conflict. This finding highlights the need to increase agriculture teacher competence in time management within the workplace and/or seek methods for reducing the workplace expectations of agriculture teachers. Acknowledging the challenges of implementing these recommendations, we suggest qualitative research should guide action. Specifically, we feel qualitative research exploring the motivating factors behind agriculture teachers investing additional time doing work related activities, barriers to agriculture teachers reducing the demands of the workplace domain, and the time management practices being employed by agriculture teachers can shed additional light on this issue. This information can serve as a platform to develop policies and procedures that eliminate barriers to agriculture teachers balancing work and family roles, optimize the time management practices of agriculture teachers, and address the motivational factors of agriculture teachers without placing additional time requirements on teachers.

The work-family conflict variables, WIF and FIW, were also compared between male and female agriculture teachers. Traditional gender expectations suggest women should experience more work-family conflict than men because they traditionally take on greater responsibility with rearing children than men (Byron, 2005; Higgins, Duxbury, & Lee, 1994; Pleck, 1977). However, our research found no statistically significant differences between male and female agriculture teachers for FIW and WIF. Research in agricultural education has targeted the specific challenges of female agriculture teachers with findings illuminating work-family conflict challenges among female teachers (Baxter, Stephens, & Thayer-Bacon, 2011; Foster, 2001; Kelsey 2006; Murray, Flowers, Croom, & Wilson, 2011). However, our findings suggest the scope of research exploring specific work-family conflict challenges of agriculture teachers should include both male and female agriculture teachers.

Research objective three sought to describe agriculture teachers' turnover intentions. The construct used to measure turnover intentions was specifically designed to identify teachers' intentions to leave the profession prior to retirement. On average, respondents "somewhat disagreed" with statements indicating they intended to leave agriculture teaching before retirement. This is consistent with research in agricultural education identifying high career commitment and

job satisfaction among practicing agriculture teachers (Cano & Miller, 1992; Castillo, Conklin, & Cano, 1999; Chaney, 2007; Chenevey, Ewing, & Whittington, 2008; Crutchfield, Ritz, & Burris, 2013; Grady & Burnett, 1985; Kitchel et al., 2012; McKim & Velez, 2015; Ritz, Burris, & Brashears, 2013; Sorensen & McKim, 2014; Walker et al., 2004). In addition to identifying low turnover intentions, our study identified male and female agriculture teachers have statistically similar intentions to remain in the profession. This finding supports previous research in agricultural education indicating gender does not influence teachers' commitment to stay in the profession (Cano & Miller, 1992; Sorensen & McKim, 2014). Additionally, these findings suggest the "revolving door" or teacher turnover is not specific to one gender; therefore, efforts to address teacher commitment to the agriculture teacher profession should include *both* male and female teachers. Furthermore, these findings support the need for longitudinal research addressing potential mediating variables between agriculture teachers' intention to remain in the teaching profession and actual retention.

The final research objective sought to determine the relationship between agriculture teachers' WIF, FIW, and turnover intentions. In our model of turnover intentions, only one of the independent variables, WIF, was a statistically significant predictor. This finding suggests as agriculture teachers experience higher levels of work interfering with family, their intention to leave the profession increases. This finding supports research outside of education linking work-family conflict, turnover intentions, and actual turnover (Allen et al., 2000; Grandey & Cropanzano, 1999; Greenhaus et al., 1997; Netemeyer et al., 1996). Furthermore, this finding aligns with research in agricultural education identifying a relationship between teachers' ability to balance work and family and their career commitment (Chaney, 2007; Crutchfield et al., 2013; Sorensen & McKim, 2014).

The relationship between WIF and turnover intentions is particularly concerning considering agriculture teachers' WIF was the higher of the two work-family conflict domains. However, agriculture teachers still perceived low levels of turnover intentions. We suggest this finding may illuminate a tenuous balance for agriculture teachers in which they experience WIF while simultaneously experiencing job satisfaction. Additionally, as the scarcity hypothesis and role conflict theory suggest (Greenhaus & Beutell, 1985; Marks, 1977), this finding suggests agriculture teachers might be susceptible to turnover due to changes in shifting resource requirements within either the work or family domain. For example, a teacher may experience acceptable levels of perceived WIF, but as family role requirements change, requiring additional time (e.g. the birth of a child, family conflicts, taking care of an aging family member) or the time required to complete their work increases (e.g. teaching unfamiliar coursework, adding a new career development team, larger class sizes), agriculture teachers may not be able to cope. Research should explore the relationship between unexpected time requirements within either the work or family domain and teacher turnover in agricultural education. Additionally, research should seek to determine the threshold of work-family conflict that agriculture teachers are willing to endure before making the decision to seek employment elsewhere.

Because WIF was a significant factor in the model predicting turnover intentions, while FIW was not, the need for improving work domain characteristics of agriculture teachers exist. School administrators and the agricultural education profession should increase awareness of the conflict agriculture teachers experience when work responsibilities interfere with family life, creating the potential for teacher turnover. Perhaps policymakers and administrators could reduce WIF among agriculture teachers by providing flexible work options. One example might include expanding part-time agriculture teaching positions so teachers with heavy family commitments can still remain connected to agricultural education. Additionally, we recommend agriculture teachers seek out and utilize volunteers and community resources in an effort to reduce WIF. These findings

also have potential implications for the blending of family with work, which might decrease WIF and FIW. More research in this area is warranted.

Agricultural educators facilitate powerful learning experiences for students. The agricultural education profession must ensure these powerful offerings do not come at the cost of detrimental work-family conflict and agriculture teachers seeking a way out of the profession. Our research highlighted agriculture teachers perceived work family conflict in the form of their work obligations interfering with their family role. Leaders within agricultural education must consider the potential negative consequences of WIF, including turnover intentions, and methods for reducing work-family conflict among teachers. The future of the agricultural education profession relies on our efforts to keep qualified teachers in the classroom; we must do our part.

References

Allen, T. D., Herst, D. E., Bruck, C. S. & Sutton, M. (2000). Consequences associated with work to family conflict: a review and agenda for future research. *Journal of Occupational Health Psychology*, 5, 278–308. doi: 10.1037/1076-8998.5.2.278

Barnett, R. C. & Hyde, J. S. (2001). Women, men, work, and family: An expansionist theory. *American Psychologist*, 56(10), 781-796. doi: 10.1037/0003-066X.56.10.781

Baxter, L., Stephens, C., & Thayer-Bacon, B. J. (2011). Perceptions and barriers of four female agricultural educators across generations: A qualitative study. *Journal of Agricultural Education*, 52(4), 13-23. doi: 10.5032/jae.2011.04013

Blackburn, J. J., & Robinson, J. S. (2008). Assessing teacher self-efficacy and job satisfaction of early career agriculture teachers in Kentucky. *Journal of Agricultural Education*, 49(3), 1-11. doi: 10.5032/jae.2008.03001

Bond, J. T., Galinsky, E. & Swanberg, J. E. (1998). *The 1997 National Study of the Changing Workplace*. (ERIC Document Reproduction Service No. 425871). Retrieved from <http://eric.ed.gov/?id=ED425871>.

Boone, H. N., & Boone, D. A. (2007). Problems faced by high school agricultural education teachers. *Journal of Agricultural Education*, 48(2), 36-45. doi:10.5032/jae.2009.01021

Boyd, D., Lankford, H., Loeb, S., & Wyckoff, J. (2005). Explaining the short careers of high achieving teachers in schools with low-performing students. *American Economic Review*, 166-171.

Bruck, C. S., Allen, T. D., & Spector, P. E. (2002). The relation between work–family conflict and job satisfaction: A finer-grained analysis. *Journal of Vocational Behavior*, 60(3), 336-353. doi: 10.1006/jvbe.2001.1836

Byron, K. (2005). A meta-analytic review of work-family conflict and its antecedents. *Journal of Vocational Behavior*, 67, 169-198. doi: 10.1016/j.jvb.2004.08.009

Camp, W. G., Broyles, T., & Skelton, N. S. (2002). *A national study of the supply and demand for teachers of agricultural education in 1999-2001*. Retrieved from http://aaaeonline.org/files/supply_demand/teachersupply2002.pdf

Cano, J., & Miller, G. (1992). An analysis of job satisfaction and job satisfier factors among six taxonomies of agricultural education teachers. *Journal of Agricultural Education*, 33(4), 9-16. doi:10.5032/jae.1992.03040

Carlson, D. S., Kacmar, M. K. & Williams, L. J. (2000). Construction and validation of a multidimensional measure of work-family conflict. *Journal of Vocational Behavior*, 56 (2), 249–76. doi: 10.1006/jvbe.1999.1713

Castillo, J. X., Conklin, E. A., & Cano, J. (1999). Job satisfaction of Ohio agricultural education teachers. *Journal of Agricultural Education*, 40(2), 19-27. doi:10.5032/jae.1999.02019

Chaney, C. A. (2007). *Work-life variables influencing attrition among beginning agriscience teachers of Texas* (Doctoral dissertation). Retrieved from <http://repositories.tdl.org/>

Chenevey, J. L., Ewing, J. C., & Whittington, M. S. (2008). Teacher burnout and job satisfaction among agricultural education teachers. *Journal of Agricultural Education*, 49(3), 12-22. doi: 10.5032/jae.2008.03012

Cinamon, R. G., & Rich, Y. (2005). Work-family conflict among female teachers. *Teaching and Teacher Education*, 21, 365-378. doi: 10.1016/j.tate.2004.06.009

Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). New York, NY: John Wiley & Sons.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). Hillsdale, NJ: Erlbaum.

Crouter, C. (1984). Spillover from family to work: the neglected side of the work-family interface. *Human Relations*, 37, 425-42. doi: 10.1177/001872678403700601

Crutchfield, N., Ritz, R., & Burris, S. (2013). Why agricultural educators remain in the classroom. *Journal of Agricultural Education*, 54(2), 1-14. doi:10.5032/jae.2013.02001

Danielson, L. (2002). Developing and retaining quality classroom teachers through mentoring. *The Clearing House*, 75(4), 183-185. doi: 10.1080/00098650209604927

Darling-Hammond, L. (2000). *Solving the dilemmas of teacher supply, demand, and standards: How we can ensure a competent, caring, and qualified teacher for every child*. New York: National Commission on Teaching & America's Future. Retrieved from <http://nctaf.org/wp-content/uploads/2012/01/supply-demand-standards.pdf>

Dillman, D. A. (2007). *Mail and internet surveys: The tailored design method* (2nd ed.). Hoboken, NJ: John Wiley & Sons, Inc.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications. Retrieved from: <http://aaaeonline.org/Resources/Documents/AAAE%20National%20Research%20Agenda.pdf>

Duxbury, L., Higgins, C., & Lee, C. (1994). Work-family conflict: A comparison by gender, family type, and perceived control. *Journal of Family Issues*, 15, 449-466. doi: 10.1177/019251394015003006

Edwards, M. C., & Briers, G. E. (1999). Assessing the inservice needs of entry-phase agriculture teachers in Texas: A discrepancy model versus direct assessment. *Journal of Agricultural Education*, 40(4), 40-49. doi: 10.5032/jae.1999.03040

Elfers, A. M., Plecki, M. L., & Knapp, M. S. (2006). Teacher mobility: Looking more closely at "the movers" within a state system. *Peabody Journal of Education*, 81(3), 94-127. doi: 10.1207/S15327930pje8103_4

Eller, W. S., Doerfler, C. B., & Meier, K. J. (2000). *Teacher turnover in Texas: Problems and prospects*. A report of the Texas Educational Excellence Project. College Station: Texas A&M University. Retrieved from <http://teep.tamu.edu/reports/report010.pdf>

Flynt, S. W., & Morton, R. C. (2009). The teacher shortage in America: Pressing concerns. *National Forum of Teacher Education Journal*, 19(3), 1-5.

Foster, B. B. (2001). Choices: A dilemma of women agricultural education teachers. *Journal of Agricultural Education*, 42(3), 1-10. doi:10.5032/jae.2001.03001

Foster, D. D., Lawver, R. G., & Smith, A. R. (2014). *National agricultural education supply & demand study: 2014 executive summary*. A report from the American Association for Agricultural Education. Retrieved from http://aaaeonline.org/Resources/Documents/NSDSummary_3_1_2015_Final.pdf.

Fu, C. K., & Shaffer, M. A. (2001). The tug of work and family: Direct and indirect domain-specific determinants of work-family conflict. *Personnel Review*, 30(5), 502-522. doi: 10.1108/EUM0000000005936

Gignac, M.A., Kelloway, E.K. & Gottlieb, B.H. (1996). The impact of caregiving on employment: a mediational model of work-family conflict. *Canadian Journal on Aging*, 15(4), 525–42. doi: 10.1017/S0714980800009405

Gonzales, L., Brown, M. S., & Slate, J. R. (2008). Teachers who left the teaching profession: A qualitative understanding. *The Qualitative Report*, 13(1), 1-11.

Grady, T. L., & Burnett, M. F. (1985). The Relationship between Job Satisfaction and Performance of Vocational Agriculture Teachers. *Journal of Vocational Education Research*, 10(3), 53-69.

Grandey, A., & Cropanzano, R. (1999). The conservation of resources model applied to work-family conflict and strain. *Journal of Vocational Behavior*, 54(2), 350-370. doi: 10.1006/jvbe.1998.1666

Greenhaus, J. H., Collins, K. M., Singh, R. & Parasuraman, S. (1997). Work and family influences on departure from public accounting. *Journal of Vocational Behavior*, 50, 249–70. doi: 10.1006/jvbe.1996.1578

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10(1), 76-88. doi: 10.2307/258214

Gutek, B. A., Searle, S., & Klepa, L. (1991). Rational versus gender role explanations for work-family conflict. *Journal of Applied Psychology*, 76(4), 560-568. doi:510.1037/0021-9010.1076.1034.1560

Higgins, C., Duxbury, L., & Lee, C. (1994). Impact of life-cycle stage and gender on the ability to balance work and family responsibilities. *Family Relations*, 43, 144–50.

Ingersoll, R. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, 38, 449-534.

Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational Leadership*, 60(8), 30-33.

Kantrovich, A. J. (2007). *A national study of the supply and demand for teachers of agricultural education from 2004-2006*. American Association for Agricultural Education. Retrieved from http://aaaeonline.org/files/supply_demand/supplydemand07.pdf

Kantrovich, A. J. (2010). *A national study of the supply and demand for teachers of agricultural education from 2007-2009*. American Association for Agricultural Education. Retrieved from <http://www.naae.org/links/resources/docs/2010-supply-Demand-study-report.pdf>

Kelsey, K. D. (2006). Teacher attrition among women in secondary agricultural education. *Journal of Agricultural Education*, 47(3), 117-129. doi: 10.5032/jae.2006.03117

Kitchel, T., Smith, A. R., Henry, A. L., Robinson, J. S., Lawver, R. G., Park, T. D., & Schell, A. (2012). Teacher job satisfaction and burnout viewed through social comparisons. *Journal of Agricultural Education*, 53(1), 31-44. doi: 10.5032/jae.2012.01031

Knight, J. A. (December, 1987). Current status of women teachers of vocational agriculture in Ohio and their perceptions of their place in the profession. *Proceedings of the National Agricultural Education Research Meeting*, 80, 223-236.

Kopelman, R. E., Rovenpor, J. L., & Millsap, R. E. (1992). Rationale and construct validity evidence for the Job Search Behavior Index: Because intentions (and New Year's resolutions) often come to naught. *Journal of Vocational Behavior*, 40, 269-287. doi: 10.1016/0001-8791(92)90051-Z

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.

Krieg, J. (2006). Teacher quality and attrition. *Economics of Education Review*, 25, 13-27. doi: 10.1016/j.econedurev.2004.09.004

Lemons L. (2013). *Do I stay or do I go? A mixed-methods study of factors of attrition as reported by leavers of secondary agriculture programs.* (Doctoral dissertation). Retrieved from <https://repositories.tdl.org/ttu-ir/handle/2346/50626>

Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education*, 42(4), 43-53. doi: 10.5032/jae.2001.04043

Marks, S. R. (1977). Multiple roles and role strain: Some notes on human energy, time and commitment. *American Sociological Review*, 42(1), 921-936. doi: 10.2307/2094577

McKim, A. J., & Velez, J. J. (2015). Exploring the relationship between self-efficacy and career commitment among early career agriculture teachers. *Journal of Agricultural Education*, 56(1), 127-140. doi: 10.5032/jae.2015.01127

Miller, L. E., & Smith, K. L. (1983). Handling non-response issues. *Journal of Extension*, 21(5), 45-50.

Mundt, J. P., & Connors, J. J. (1999). Problems and challenges associated with the first years of teaching agriculture: A framework for preservice and inservice education. *Journal of Agricultural Education*, 40(1), 38-48. doi:10.5032/jae.1999.01038

Murray, K., Flowers, J., Croom, B., & Wilson, B. (2011). The agricultural teacher's struggle for balance between career and family. *Journal of Agricultural Education*, 52(2), 107-117. doi: 10.5032/jae.2011.02107

Myers, B. E., Dyer, J. E., & Washburn, S. G. (2005). Problems facing beginning agriculture teachers. *Journal of Agricultural Education*, 46(3), 47-55. doi:10.5032/jae.2005.03047

National Center for Educational Statistics [NCES]. (2014). *Schools and Staffing Survey (SASS)*. Retrieved from: <https://nces.ed.gov/surveys/sass/>

National FFA Organization (2014). *FFA membership*. Retrieved from <https://www.ffa.org/about/who-we-are/our-membership>

Netemeyer, R. G., Boles, J. S. & McMurrian, R. (1996). Development and validation of work–family conflict and family–work conflict scales. *Journal of Applied Psychology*, 81, 400–410. doi: 10.1037/0021-9010.81.4.400

Newcomb, L. H., Betts, S. I., & Cano, J. (1987). Extent of burnout among teachers of vocational agriculture in Ohio. *Journal of the American Association of Teacher Educators in Agriculture*, 28(1), 26-33. doi:10.5032/jaatea.1987.01026

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

Ogungbamila, B. (2014). Work-family interference and occupational burnout among employees in service occupations in nigeria. *International Journal of Psychological Studies*, 6(3), 71-79. doi: 10.5539/ijps.v6n3p71

Pleck, J. H. (1977). The work-family role system. *Social Problems*, 24, 417-442. doi: 10.2307/800135

Ritz, R., Burris, S., & Brashears, T. (2013). The effects of a time management professional development seminar on stress and job satisfaction of beginning agriscience teachers in west Texas. *Journal of Agricultural Education*, 54(3), 1-14. doi: 10.5032/jae.2013.03001

Roberts, T. G., Harder, A., Brashears, M. T. (Eds.). (2016). *American Association for Agricultural Education national research agenda: 2016-2020*. Gainesville, FL: Department of Agricultural Education and Communication.

Shen, J. (1997). Teacher retention and attrition in public schools: Evidence from SASS91. *Journal of Education Research*, 91(2), 81-95. doi: 10.1080/00220679709597525

Smith, T. M., & Ingersoll, R. M. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal*, 41, 681-714.

Sorensen, T. J., & McKim, A. J. (2014). Perceived work-life balance ability, job satisfaction, and professional commitment among agriculture teachers. *Journal of Agricultural Education*, 55(4), 116-132. doi: 10.5032/jae.2014.04116

Swan, B. G. (2005). *The relationship between the 2004 Ohio State University Agricultural Education student teachers' learning style, teacher heart, and teacher sense of efficacy*. (Unpublished doctoral dissertation). The Ohio State University, Columbus.

Theobald, N. (1990). An examination of the influence of personal, professional, and school district characteristics on public school teacher retention. *Economics of Education Review*, 9(3), 241-250. doi: 10.1016/0272-7757(90)90005-P

Tippens, A., Ricketts, J. C., Morgan, A. C., Navarro, M., & Flanders, F. B. (2013). Factors related to teachers' intention to leave the classroom early. *Journal of Agricultural Education*, 54(4), 58-72. doi: 10.5032/jae.2013.04058

Torres, R. M., Lawver, R. G., & Lambert, M. D. (2009). Job-related stress among secondary agricultural education teachers: A comparison study. *Journal of Agricultural Education*, 50(3), 100-111. doi: 10.5032/jae.2009.03100

Torres, R. M., Ulmer, J. D., & Aschenbrener, M. S. (2008). Workload distribution among agriculture teachers. *Journal of Agricultural Education*, 49(2), 75. doi: 10.5032/jae.2008.02075

Vandenberg, R. J., & Nelson, J. B. (1999). Disaggregating the motives underlying turnover intentions: When do intentions predict turnover behavior? *Human Relations*, 52(10), 1313-1336.

Vieira, J. M., Lopez, F. G., & Matos, P. M. (2013). Further Validation of Work-Family Conflict and Work-Family Enrichment Scales among Portuguese Working Parents. *Journal of Career Assessment*, 00(0), 1-16. doi: 0.1177/1069072713493987.

Walker, W. D., Garton, B. L., & Kitchel, T. J. (2004). Job satisfaction and retention of secondary agriculture teachers. *Journal of Agricultural Education*, 45(2), 28-38. doi:10.5032/jae.2004.02028

Westman, M., & Piotrkowski, C. S. (1999). Introduction to the special issue: Work–family research in occupational health psychology. *Journal of Occupational Health Psychology*, 4(4), 301-306. doi:10.1037/1076-8998.4.4.301

Wheeler, J., & Knobloch, N. A. (2006). Relationship of teacher and program variables to beginning agriculture teachers' sense of efficacy. *Proceedings of the National Agricultural Education Research Conference, Charlotte, NC*, 33, 590-600.